

## PATENT ABSTRACTS OF JAPAN

(11)Publication number : 10-277091

(43)Date of publication of application : 20.10.1998

(51)Int. Cl.

A61F 13/15

A61F 5/44

(21)Application number : 09-097917

(71)Applicant : OJI PAPER CO LTD

(22)Date of filing : 02.04.1997

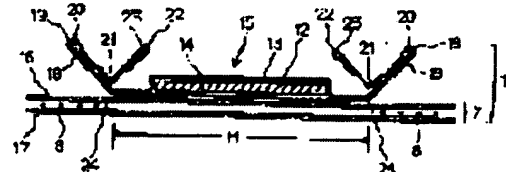
(72)Inventor : TSUBATA MASARU  
SAISAKA MIYUKI  
TAKESUE TOSHIMI  
HIRAI YOSHIO

## (54) DISPOSAL DIAPER

## (57)Abstract:

**PROBLEM TO BE SOLVED:** To obtain a satisfactory wearing feeling and an excreta leakage preventing function by separating a side edge part upward from an absorbing main body by the shrinkage of the shrinking elastic member of the tip edge part of a side flap and separating a fold-back edge part from an external member by the shrinkage of the shrinking elastic member of the fold-back edge part.

**SOLUTION:** The side flap 18 of the absorbing main body 15 of trunks type disposable diaper 1 is folded back onto a top sheet 13 at a fold-back edge part 19 to arranged the shrinking elastic member 20 at the part 19. In addition, the folded-back side flap 18 is adhered and fixed to the top sheet 13 at a fixing point 21, and the shrinking elastic member 23 is arranged at the side edge part 22 of the side flap 18 so as to be wrapped by the side flap 18. Then, the part 22 is separated upward from the main body 15 by the shrinking of the member 23 of the part 22 of the side flap 18 and the part 19 is separated from the external member 7 by the shrinking of the member 20 of the part 19.



## LEGAL STATUS

[Date of request for examination] 17.07.2000

[Date of sending the examiner's decision of rejection]

[Kind of final disposal of application other than the examiner's decision of rejection or application converted registration]

[Date of final disposal for application]

[Patent number] 3422351

[Date of registration] 25.04.2003

[Number of appeal against examiner's decision of rejection]

[Date of requesting appeal against examiner's decision of rejection]

[Date of extinction of right]

Copyright (C); 1998,2003 Japan Patent Office

BEST AVAILABLE COPY

## \* NOTICES \*

Japan Patent Office is not responsible for any damages caused by the use of this translation.

1. This document has been translated by computer. So the translation may not reflect the original precisely.
2. \*\*\*\* shows the word which can not be translated.
3. In the drawings, any words are not translated.

## CLAIMS

[Claim(s)]

[Claim 1] The top sheet of liquid permeability, the backseat of liquid impermeability, and the absorber arranged among both [ these ] sheets. The absorptivity body which has the side flap which extends outside from the longitudinal direction edges on both sides of an absorber. Said absorptivity body is joined, surround the circumference of the waist from a wearer's antinode at the time of wear, and it consists of a sheathing member which hits an absorptivity body against a wearer and holds it. In the trousers mold usage \*\*\*\* diaper with which the edges-on-both-sides section at the time which faces was joined, circumference opening of the waist and circumference opening of a foot of a pair were formed, and the flexible elastic member has been arranged along with said each opening the past time of said sheathing member, and later self -- Said side flap is turned up on said top sheet, and in the side edge section of the turned-up side flap the 1st flexible elastic member Moreover, while the 2nd flexible elastic member is arranged in the state of expanding at a clinch line part and adhesion immobilization is carried out on said top sheet along with the longitudinal direction of said absorptivity body between a clinch line part and the side edge section Adhesion immobilization of the longitudinal direction both ends of said side flap is carried out on said top sheet. Furthermore, said absorptivity body is that adhesion immobilization is carried out by the adhesion field established in width of face narrower than the width of face between the longitudinal direction edges on both sides of said absorptivity body at said sheathing member. By contraction of the 1st flexible elastic member prepared in the side edge section of said side flap at the time of wear, while the side edge section of said side flap has estranged from said absorptivity body to the upper part The trousers mold usage \*\*\*\* diaper characterized by said clinch line part having estranged from said sheathing member by contraction of the 2nd flexible elastic member prepared in said clinch line part.

[Claim 2] Said side flap is a trousers mold diaper according to claim 1 characterized by consisting of the nonwoven fabric sheet which extends from the longitudinal direction edges on both sides of said backseat.

[Claim 3] Said absorber is a trousers mold usage \*\*\*\* diaper according to claim 1 or 2 characterized by being formed in a sandglass mold with the narrow width of face of a center section compared with the width of face of the longitudinal direction both ends.

[Claim 4] Said sheathing member is a trousers mold usage \*\*\*\* diaper given in any 1 term of claim 1 characterized by being formed from the inner layer sheet which consists of a nonwoven fabric sheet by which the laminating was carried out on the outer layer sheet which consists of a nonwoven fabric sheet, and an outer layer sheet - claim 3.

[Claim 5] It has resulted [ from one side edge section ] in the side at the side edge section of another side through the length-from-the-crotch-to-the-cuff section of said sheathing member at said past time of said sheathing member. The 3rd flexible elastic member which consists of two or more flexible spring materials with which at least the part of them meets circumference opening of a foot of said pair is arranged in the state of expanding between said outer layer sheets and said inner layer sheets. It has resulted in the side edge section of another side. said transformation of said sheathing member -- time -- a side -- setting -- one side -- pass the length-from-the-crotch-to-the-cuff section of said sheathing member from the side edge section -- It is arranged in the state of expanding, without the 4th flexible elastic member which consists of two or more flexible spring materials with which at least the part of them meets circumference opening of a foot of said pair intersecting said 3rd flexible elastic member between said outer layer sheets and said inner layer sheets. These flexible spring materials It is arranged so that it may spread gradually, by the time the spacing results [ from the length-from-the-crotch-to-the-cuff section of said sheathing member ] in the side edge section of each at the order body time. And a trousers mold usage \*\*\*\* diaper given in any 1 term of claim 1 characterized by the distance between said flexible spring materials most estranged in the side edge section of one [ at least ] sheathing member at the order body time being 1/2 or more [ of the die length of the side edge section ] - claim 4.

[Claim 6] Said 3rd flexible elastic member and the 4th flexible elastic member are a trousers mold usage \*\*\*\* diaper according to claim 5 characterized by being cut in the center in alignment with the longitudinal direction in the length-from-the-crotch-to-the-cuff section of said sheathing member, and arranging at least the part in the state of un-elongating in the length-from-the-crotch-to-the-cuff section of said sheathing member.

[Claim 7] Said 3rd flexible elastic member and/or the 4th flexible elastic member are a trousers mold usage \*\*\*\* diaper according to claim 5 or 6 characterized by constituting two or more using the flexible spring material with which expanding stress differs.

[Claim 8] A trousers mold usage \*\*\*\* diaper given in any 1 term of claim 5 characterized by the expanding stress of the flexible spring material arranged in the outermost part being larger than the expanding stress of the flexible spring material arranged the innermost part of these in said 3rd flexible elastic member and/or the 4th flexible elastic member - claim 7.

[Claim 9] between the edges-on-both-sides sections at said past time of said sheathing member, and/or said later self -- a trousers mold usage \*\*\*\* diaper given in any 1 term of claim 5 characterized by arranging the 5th flexible elastic member which consists of two or more flexible spring materials crosswise [ of a diaper ] between said outer layer sheets and said inner layer sheets in the state of expanding between the edges-on-both-sides sections at the time - claim 8.

[Translation done.]

## \* NOTICES \*

Japan Patent Office is not responsible for any damages caused by the use of this translation.

1. This document has been translated by computer. So the translation may not reflect the original precisely.
2. \*\*\*\* shows the word which can not be translated.
3. In the drawings, any words are not translated.

---

DETAILED DESCRIPTION

---

## [Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention relates to the usage \*\*\*\* diaper currently beforehand formed in the trousers mold.

[0002]

[Description of the Prior Art] Conventionally, junction immobilization of the part which is equivalent to the regio lateralis on either side as a usage \*\*\*\* diaper in the side flap of the diaper of a flat type which is indicated by JP,57-77304,A at the time of wear, for example is carried out beforehand, and the so-called trousers mold diaper which prepared circumference opening of the waist and circumference opening of a foot is proposed. In such a trousers mold usage \*\*\*\* diaper, opening of the circumference of a biped, circumference opening of the waist, and in order to raise the flattery nature and fit nature of a diaper to a wearing person to the circumference both-sides section of the waist further, flexible elasticity is given, for example, as indicated by JP,3-16920,U, JP,4-28363,A, JP,4-166150,A, and JP,4-289201,A. Attachment and detachment by the wearer are possible for such a trousers mold usage \*\*\*\* diaper, and need has been growing also as objects for an adult, such as a stage of a diaper detached building of a small child, or an incontinentia person.

[0003]

[Problem(s) to be Solved by the Invention] In a trousers mold usage \*\*\*\* diaper which is indicated by above-mentioned JP,3-16920,U and JP,4-28363,A Although the function which the elastic flexible elastic member is arranged at opening of the circumference of the waist and opening of the circumference of a biped, these flexible elastic members extract opening, and an absorber is made to fit a wearer, and prevents the leakage from opening is given to the diaper Since the circumference flank of the waist did not have flexible elasticity, when fit nature was imperfect, it absorbed urine etc. and the weight of a diaper increased during wearing, it had the problem that the shearing omission of a diaper arose.

[0004] Moreover, in the case of a trousers mold usage \*\*\*\* diaper which is indicated by JP,4-166150,A and JP,4-289201,A, arrange a flexible elastic member to the circumference perimeter of the waist, or the circumference flank of the waist, are raising fit nature, but Since the element of a routing counter [ increase and ] which constitutes a diaper by arranging a flexible elastic member to the circumference of the waist increases, while becoming trouble when attaining the purpose required for the goods of usage \*\*\*\* of mass-producing cheaply Thus, since it is the sense with which the arranged flexible elastic member essentially has the effectiveness which binds the circumference of a wearer's waist tight in a longitudinal direction and which this direction of bolting intersects at right angles to the direction where a diaper tends to slip down, There was a problem that the force of bolting must be enlarged for acquiring the effectiveness of stopping shearing omission, therefore the feeling of oppression beyond the need might be given to a wearer.

[0005] The purpose of this invention solves the above-mentioned technical problem, and forms a trousers mold usage \*\*\*\* diaper by the absorptivity body and the sheathing member. Prepare a side flap in an absorptivity body and it is equipped with the leakage prevention function to estrange up on the basis of an absorptivity body, and the leakage prevention function to estrange up on the basis of a sheathing member. The function to hold the excrement for which a usage \*\*\*\* diaper is asked originally in the inside and outside of an absorptivity body is given to an absorptivity body. By giving the function to make an absorptivity body a sheathing member at the time of \*\*, and to stick an absorptivity body on a wearer's body, and to suppress a gap of an absorptivity body also to a motion of a wearer, and giving the function which became independent to the absorptivity body and the sheathing member It is in offering the trousers mold usage \*\*\*\* diaper which has the leakage prevention function of a very good feeling of wear, and excrement.

[0006]

[Means for Solving the Problem] The top sheet of liquid permeability [ this invention ], and the backseat of liquid impermeability, The absorptivity body which has the absorber arranged among both [ these ] sheets, and the side flap which extends outside from the longitudinal direction edges on both sides of an absorber, Said absorptivity body is joined, surround the circumference of the waist from a wearer's antinode at the time of wear, and it consists of a sheathing member which hits an absorptivity body against a wearer and holds it. In the trousers mold usage \*\*\*\* diaper with which the edges-on-both-sides section at the time which faces was joined, circumference opening of the waist and circumference opening of a foot of a pair were formed, and the flexible elastic member has been arranged along with said each opening the past time of said sheathing member, and later self -- Said side flap is turned up on said top sheet. and in the side edge section of the turned-up side flap the 1st flexible elastic member Moreover, while the 2nd flexible elastic member is arranged in the state of expanding at a clinch line part and adhesion immobilization is carried out on said top sheet along with the longitudinal direction of said absorptivity body between a clinch line part and the side edge section Adhesion immobilization of the longitudinal direction both ends of said side flap is carried out on said top sheet. Furthermore, said absorptivity body is that adhesion immobilization is carried out by the adhesion field established in width of face narrower than the width of face between the longitudinal direction edges on both sides of said absorptivity body at said sheathing member. By contraction of the 1st flexible elastic member prepared in the edge section of said side flap at the time of wear, while the side edge section of said side flap has estranged from said absorptivity body to the upper part It is related with the trousers mold usage \*\*\*\* diaper characterized by said clinch line part having estranged from said sheathing member by contraction of the 2nd flexible elastic member prepared in said clinch line part.

[0007] Moreover, this invention relates to the aforementioned trousers mold diaper characterized by said side flap consisting of the nonwoven fabric sheet which extends from the longitudinal direction edges on both sides of said backseat. Moreover, this invention relates to said each trousers mold usage \*\*\*\* diaper characterized by forming said absorber in a sandglass mold with the narrow width of face of a

center section compared with the width of face of the longitudinal direction both ends. Moreover, this invention relates to one which is characterized by forming said sheathing member from the inner layer sheet which consists of a nonwoven fabric sheet by which the laminating was carried out on the outer layer sheet which consists of a nonwoven fabric sheet, and an outer layer sheet of the aforementioned trousers mold usage \*\*\*\* diapers.

[0008] Moreover, this invention is set to a side at said past time of said sheathing member. It has resulted [ from one side edge section ] in the side edge section of another side through the length-from-the-crotch-to-the-cuff section of said sheathing member. The 3rd flexible elastic member which consists of two or more flexible spring materials with which at least the part of them meets circumference opening of a foot of said pair is arranged in the state of expanding between said outer layer sheets and said inner layer sheets. It has resulted in the side edge section of another side. said transformation of said sheathing member -- time -- a side -- setting -- one side -- pass the length-from-the-crotch-to-the-cuff section of said sheathing member from the side edge section -- It is arranged in the state of expanding, without the 4th flexible elastic member which consists of two or more flexible spring materials with which at least the part of them meets circumference opening of a foot of said pair intersecting said 3rd flexible elastic member between said outer layer sheets and said inner layer sheets. These flexible spring materials It is arranged so that it may spread gradually, by the time the spacing results [ from the length-from-the-crotch-to-the-cuff section of said sheathing member ] in the side edge section of each at the order body time. And it is related with one which is characterized by the distance between said flexible spring materials most estranged in the side edge section of one [ at least ] sheathing member at the order body time being 1/2 or more [ of the die length of the side edge section ] of the aforementioned trousers mold usage \*\*\*\* diapers.

[0009] Moreover, said 3rd flexible elastic member and the 4th flexible elastic member are cut in the center in alignment with the longitudinal direction in the length-from-the-crotch-to-the-cuff section of said sheathing member, and this invention relates to one which is characterized by arranging at least the part in the state of un-elongating in the length-from-the-crotch-to-the-cuff section of said sheathing member of the aforementioned trousers mold usage \*\*\*\* diapers.

[0010] Moreover, this invention relates to one which is characterized by constituting said 3rd flexible elastic member and/or two or more 4th flexible elastic members using the flexible spring material with which expanding stress differs of the aforementioned trousers mold usage \*\*\*\* diapers.

[0011] Moreover, this invention relates to one which is characterized by the expanding stress of the flexible spring material arranged in the outermost part being larger than the expanding stress of the flexible spring material arranged the innermost part of these of the aforementioned trousers mold usage \*\*\*\* diapers in said 3rd flexible elastic member and/or the 4th flexible elastic member.

[0012] moreover, this invention -- between the edges-on-both-sides sections at said past time of said sheathing member, and/or said later self -- it is related with one which is characterized by arranging the 5th flexible elastic member which consists of two or more flexible spring materials crosswise [ of a diaper ] between said outer layer sheets and said inner layer sheets in the state of expanding between the edges-on-both-sides sections at the time of the aforementioned trousers mold usage \*\*\*\* diapers.

[0013]

[Embodiment of the Invention] According to the trousers mold usage \*\*\*\* diaper of this invention, the side flap which extends outside from the longitudinal direction edges on both sides of an absorber and an absorber is prepared in an absorptivity body. A side flap is turned up on a top sheet and the 1st flexible elastic member is arranged in the state of expanding at the side edge section of the turned-up side flap. Moreover, the 2nd flexible elastic member is arranged in the state of expanding at a clinch line part. Along with the longitudinal direction of an absorptivity body, adhesion immobilization of the side flap is carried out on a top sheet between a clinch line part and the side edge section. The side edge section has estranged from the absorptivity body to the upper part on the basis of the point that it was fixed on the top sheet and adhesion immobilization of the longitudinal direction both ends of the side flap furthermore turned up was carried out between a line part and the side edge section by return at the top sheet. When it is made to wear as a trousers mold usage \*\*\*\* diaper made to unite with a sheathing member, By the 1st pocket structure being formed in the both sides of an absorptivity body of the side flap section from said radix point to [ section / the side edge section sticks inside a wearer's thigh, and ] the side edge section Even if it is the case where a lot of urine is excreted at once, the case where urine is excreted by side \*\*\*\*\*, and the case where a loose passage or a water stool is excreted, excrement is a leakage broth with the pile thing out of the diaper according to pocket structure.

[0014] In this case, if the 1st pocket structure is formed with a side flap as mentioned above, using the thing of the configuration of a sandglass mold as an absorber, it will set in the center section which meets crosswise [ of an absorber ]. Since the direction of spacing during both the radix points of the side flap section becomes large and serves as the form where an absorber is wrapped in in pocket structure from the breadth of an absorber, Even if it is in the condition to which urine was absorbed to some extent and the rate of absorption of an absorber fell when a lot of urine whose rate of absorption of an absorber is smaller than the rate of urination is excreted in the center section, i.e., the length-from-the-crotch-to-the-cuff section, which meets crosswise [ of an absorber ] Urine is temporarily confined into pocket structure and it becomes possible about urine leaking out of an absorptivity body to stop as much as possible.

[0015] Moreover, on the absorptivity body of the trousers mold usage \*\*\*\* diaper of this invention, the 2nd flexible elastic member is arranged in the state of expanding at the clinch line part of a side flap. Since the sheathing member is pasted by the adhesion field established in width of face narrower than the width of face between the longitudinal direction edges on both sides of an absorptivity body, When it is made to wear as a trousers mold usage \*\*\*\* diaper made to unite with a sheathing member, a clinch line part Because estrange from a sheathing member to the upper part on the basis of both the radial border of the adhesion field of an absorptivity body and a sheathing member and a clinch line part sticks inside a wearer's thigh It becomes possible to make the 2nd pocket structure by the side edge section of a side flap and the clinch line part of a side flap form in the outside of the 1st pocket. Since it can confine into the 2nd pocket even when excrement overcomes the 1st pocket, it becomes possible about excrement leaking out of an absorptivity body to stop further.

[0016] At this time, the backseat of liquid impermeability which forms an absorptivity body is made equal to the breadth of the longitudinal direction both ends of an absorber in the trousers mold usage \*\*\*\* diaper of this invention, and if a side flap is made to form with the nonwoven fabric sheet which extends from the longitudinal direction edges on both sides of a backseat, since the field of the outside to the absorptivity body of the 2nd pocket has liquid impermeability, it will become possible [ stopping further ] about excrement leaking out of an absorptivity body.

[0017] Moreover, the radix point of the 1st pocket structure which is the point which carried out adhesion immobilization of the field between the clinch line part of the turned-up side flap, and the side edge section in the trousers mold usage \*\*\*\* diaper of this invention at the top sheet, About a location with the radix point of the 2nd pocket structure which is the point which carried out adhesion immobilization, an absorptivity body to a sheathing member It is possible to make the cross-section configuration of a U character mold

form according to the 1st pocket structure and the 2nd pocket structure, when the radix point of the 1st pocket structure is carried out inside the radix point of the 2nd pocket structure. It is possible to make the cross-section configuration of a V character mold form according to the 1st pocket structure and the 2nd pocket structure, when the radix point of the 1st pocket structure and the radix point of the 2nd pocket structure are in the same location. Moreover, it is possible to make the cross-section configuration of a Y character mold where the 1st pocket structure branched from the 2nd pocket structure when the radix point of the 1st pocket structure was carried out outside the radix point of the 2nd pocket structure form. In any case, it becomes possible [ stopping to the minimum ] about excrement leaking out of an absorptivity body.

[0018] Moreover, the trousers mold usage \*\*\*\* diaper of this invention gives the function to hold the excrement for which a usage \*\*\*\* diaper is asked originally in the inside and outside of an absorber to an absorptivity body. Although the function to support an absorptivity body to a sheathing member, and to stick an absorptivity body on a wearer's body, and to suppress a gap of an absorptivity body also to a motion of a wearer is given It has the feeling of wear which flexible elasticity is given at opening of the circumference of the foot of a pair, opening of the circumference of the waist, and the flank of the circumference of a bent back, and was excellent in the sheathing member. According to the operation which flexible elasticity is given to also in the antinode flank and/or the back of the circumference of the waist, and makes a wearer stick an absorptivity body If urinary leakage serves as an absorptivity body with few things since it is hard to produce a clearance among wearers, and the outer layer sheet and inner layer sheet of a sheathing member are further formed with a nonwoven fabric sheet The very good feeling of wear similar to the feeling which wore underwear is obtained without having good permeability and piling up inside a \*\*\*\* diaper using sweat during wear.

[0019] The flexible elastic member arranged at circumference opening of a foot of the pair in the sheathing member of the trousers mold usage \*\*\*\* diaper of this invention It has resulted [ from one side edge section ] in the side at the side edge section of another side through the length-from-the-crotch-to-the-cuff section of a sheathing member at said past time of a sheathing member. The 3rd flexible elastic member which consists of two or more flexible spring materials with which at least the part of them meets circumference opening of a foot of a pair is arranged in the state of expanding between an outer layer sheet and a inner layer sheet. It has resulted in the side edge section of another side. the transformation of a sheathing member -- time -- a side -- setting -- one side -- pass the length-from-the-crotch-to-the-cuff section of a sheathing member from the side edge section -- It is arranged in the state of expanding, without the 4th flexible elastic member which consists of two or more flexible spring materials with which at least the part of them meets circumference opening of a foot of a pair intersecting the 3rd flexible elastic member between an outer layer sheet and a inner layer sheet. In the length-from-the-crotch-to-the-cuff section of a sheathing member, since the 3rd flexible elastic member and the 4th flexible elastic member have estranged, in the length-from-the-crotch-to-the-cuff section which met circumference opening of a foot of a pair, the shrinkage force of a flexible elastic member is not acting to a sheathing member.

[0020] Although it is indispensable in order to be arranging a flexible elastic member in parts other than the length-from-the-crotch-to-the-cuff section in circumference opening of a foot of the pair in the sheathing member of the trousers mold usage \*\*\*\* diaper of this invention, to always stick an absorptivity body in the body to a motion of a wearer and to prevent the gap whose absorptivity body is under wear In the length-from-the-crotch-to-the-cuff section, it is desirable to make deep pocket structure form, as the side edge section of the 1st pocket structure estranged from the field of an absorptivity body and the clinch line part of the 2nd pocket structure estranged from the sheathing member side are made to estrange as much as possible from each field and a wearer is touched. If the 3rd flexible elastic member and the 4th flexible elastic member cross in the length-from-the-crotch-to-the-cuff section and it is made for a shrinkage force to act continuously along with circumference opening of a foot the operation which makes a wearer stick the length-from-the-crotch-to-the-cuff section of a sheathing member -- being generated -- the side edge section of the 1st pocket structure -- and The clinch line part of the 2nd pocket structure is bent so that it may be hard to carry out alienation from each field of an absorptivity body, and a sheathing member side and it may become. Deep pocket structure becomes is hard to be formed. Depending on a motion of a wearer, desirably the side edge section of the 1st pocket structure or the clinch line part of the 2nd pocket structure It will be easy to produce the condition of estranging from said field of an absorptivity body, or a sheathing member side toward a diaper outside from each radix point, the effectiveness of leakage prevention will fall remarkably in this case, and it is not desirable.

[0021] Moreover, it sets to the trousers mold usage \*\*\*\* diaper of this invention. The flexible spring material which forms the 3rd flexible elastic member and the 4th flexible elastic member which have been arranged at the sheathing member It is made to arrange so that it may spread gradually, by the time the spacing results [ from the length-from-the-crotch-to-the-cuff section of a sheathing member ] in the side edge section of each at the order body time. And if it is made to arrange so that the distance between the flexible spring materials most estranged in the side edge section of one [ at least ] sheathing member at the order body time may be 1/2 or more [ of the die length of the side edge section ] While binding the circumference of a foot tight, also bind the circumference flank of the waist tight, and the direction of bolting of this flexible elastic member intersects the both sides of the die-length direction of a diaper, and the cross direction of a diaper. while it is working in the direction which binds both sense tight and the force in which it lifts a diaper works at the time of wear -- especially -- later self -- since it is arranged so that a hip may be wrapped in at the time, a trousers mold usage \*\*\*\* diaper with little shearing omission is obtained.

[0022] That moreover, the distance between the flexible spring materials most estranged in the side edge section at the order body time is 1/2 or more [ of the die length of the side edge section ] the flexible spring material which forms the 3rd flexible elastic member and the 4th flexible elastic member which have been arranged at the sheathing member in the trousers mold usage \*\*\*\* diaper of this invention When arranging a flexible spring material so that it may have the function which also binds the circumference flank of the waist tight while 1 set of 3rd flexible elastic members and the 4th flexible elastic member bind the circumference of a foot tight, are required. If the distance between the flexible spring materials estranged most becomes less than [ of the die length of the side edge section ] 1/2. only the effectiveness which binds only one of the circumference flanks of the waist tight will be acquired the circumference of a foot by whether a flexible elastic member is arranged at the circumference opening approach of a foot, or it is arranged at the circumference opening approach of the waist.

[0023] Moreover, in the trousers mold usage \*\*\*\* diaper of this invention, the 3rd flexible elastic member and the 4th flexible elastic member which have been arranged at the sheathing member are cut in the center in alignment with the longitudinal direction in the length-from-the-crotch-to-the-cuff section of a sheathing member. Without deforming so that the absorptivity body of width of face may cringe according to the shrinkage force of a flexible elastic member in the length-from-the-crotch-to-the-cuff section if at least a part makes it arrange in the state of un-elongating in the length-from-the-crotch-to-the-cuff section of a sheathing member Can absorb urine in a large area and the side edge section of the 1st pocket structure approaches further beyond the need. the phenomenon which covers the top sheet

of liquid permeability depending on the case, and checks absorption of the urine to an absorber -- happening -- hard -- collapsibility, although it is desirable When it is made to arrange, without cutting the 3rd flexible elastic member and the 4th flexible elastic member in the length-from-the-crotch-to-the-cuff section, the same effectiveness is acquired also by stopping and arranging an expanding scale factor. [0024] Moreover, in the trousers mold usage \*\*\*\* diaper of this invention, the 3rd flexible elastic member and the 4th flexible elastic member which have been arranged at the sheathing member can also mainly arrange the flexible elastic member from which expanding stress differs by the arrangement location according to the purpose and effectiveness of the bolting by making it constitute with the flexible spring material with which expanding stress differs.

[0025] In the trousers mold usage \*\*\*\* diaper of this invention, moreover, the 3rd flexible elastic member and the 4th flexible elastic member which have been arranged at the sheathing member Even if are arranged at the circumference opening approach of a foot and it is arranged at the circumference opening approach of the waist Even if it is which, it is possible to bind the both sides of the circumference flank of the waist tight the circumference of a foot, and you may cross in the side edge section of the flexible elastic member and diaper with which some flexible spring materials have been arranged at the circumference of the waist.

[0026] In the trousers mold usage \*\*\*\* diaper of this invention, moreover, the 3rd flexible elastic member and the 4th flexible elastic member which have been arranged at the sheathing member When making it expanding stress become large rather than the flexible spring material with which the direction of the flexible spring material arranged at the outermost part, i.e., circumference opening of foot, side has been arranged at the innermost part, i.e., circumference opening of the waist, side As for the flexible spring material which the flexible spring material with the large expanding stress arranged at the circumference opening side of a foot has the operation which mainly binds the part of the circumference of a foot tight, and has been arranged at the circumference opening side of the waist, it is possible to make the circumference flank of the waist mainly act in the direction which prevents the shearing omission of a diaper by the moderate bolting force.

[0027] moreover, the trousers mold usage \*\*\*\* diaper of this invention -- setting -- between the edges-on-both-sides sections at the past time of a sheathing member, and/or later self -- by arranging the 5th flexible elastic member which consists of two or more flexible spring materials crosswise [ of a diaper ] between the outer layer sheet between the edges-on-both-sides sections at the time, and a inner layer sheet in the state of expanding It is also possible to give the work to which a wearer is made to stick an absorptivity body continuously. that by which that effectiveness is fully demonstrated at this time even if arrangement of the 5th flexible elastic member is only a side at the past time -- it is -- later self -- time -- a side -- the thing of a hip automatically stuck according to a form even when an absorber has no 5th flexible elastic member -- it is -- although -- later self -- time -- a side -- arranging -- if -- more -- a wearer -- the effectiveness which prevents a gap of the absorptivity body under wear also to a motion is acquired, and the same effectiveness is acquired, whether arrangement of the 5th flexible elastic member is continuing along with the circumference of the waist or is discontinuous.

[0028]

[Example] The drawing which shows the example of this invention below is made reference, and this invention is explained to a detail. Drawing 1 is the perspective view of the trousers mold usage \*\*\*\* diaper in the example of this invention. the past time which the trousers mold usage \*\*\*\* diaper 1 of this invention shown in drawing 1 has the circumference opening 2 of a foot, and the circumference opening 3 of the waist, and was formed by extending between circumference openings of said foot on either side -- 4 and later self -- time -- 5 -- a side seam 6 -- adhesion closing -- it is carried out. adhesion closing of a side seam 6 -- past time -- 4 and later self -- time -- 5 -- superposition and edges on both sides -- an outside -- having projected -- a condition -- or -- edges on both sides -- the inside -- having projected -- a condition -- edges on both sides -- hot melt adhesive, pressurization melting, ultrasonic melting, etc. are joined independent or by combining them along the outermost part.

[0029] Drawing 2 is the perspective view showing the expanding condition which carried out open expansion of the side seam 6 of the trousers mold usage \*\*\*\* diaper 1 of this invention shown by drawing 1. Near the circumference opening 2 of a foot of right and left of the sheathing member 7 the 3rd flexible elastic member 8 which consists of two or more flexible spring materials prepared in 4 at the past time, and later self -- time -- 5 -- preparing -- having had -- two or more -- a \*\*, while flexible elasticity is given by the 4th flexible elastic member 9 which consists of a flexible spring material near the circumference opening of the waist, flexible elasticity gives by the circumference of the waist flexible elastic member 10 -- having -- \*\*\*\* -- past time -- the circumference of the waist of 4, and later self -- time -- 5 -- flexible elasticity is given to the circumference of the waist by the 5th flexible elastic member 11.

[0030] Drawing 3 is drawing of longitudinal section showing the condition of having cut the trousers mold usage \*\*\*\* diaper 1 of this invention in the direction of X-X' in alignment with the longitudinal direction of the diaper in drawing 2, and an absorber 12 is arranged between the top sheet 13 of liquid permeability, and the backseat 14 of liquid impermeability, and it forms the absorptivity body 15.

[0031] The absorptivity body 15 is predetermined width of face to the longitudinal direction of the absorptivity body 15 on the inner layer sheet 16 which constitutes the sheathing member 7. Along with a longitudinal direction, adhesion immobilization at least of the part is carried out, and the both ends of the outer layer sheet 17 in which it is located under the inner layer sheet 16 are turned up on the absorptivity body 15 in the condition of having inserted so that the circumference of the waist flexible elastic member 10 might be wrapped in. The 5th flexible elastic member 11 is arranged between the inner layer sheet 16 and the outer layer sheet 17. When only the both ends and center section where the absorptivity body 15 and the sheathing member 7 met the longitudinal direction of an absorptivity body at this time are pasted up and a part for non-jointing is prepared, it is more desirable in order that the rigidity of the absorptivity body 15 may not check telescopic motion of the 5th flexible elastic member 11 arranged at the circumference of the waist at the time of wear.

[0032] It is the cross-sectional view showing the condition of having cut in the direction, and along with the longitudinal direction of the absorptivity body 15. adhesion immobilization of the absorptivity body 15 is carried out at least by the part by predetermined width of face (H) on the Y-Y' inner layer sheet 16 with drawing 4 perpendicular to the longitudinal direction of a diaper [ in / for the trousers mold usage \*\*\*\* diaper 1 of this invention / drawing 2 ] which constitutes the sheathing member 7, and the 3rd flexible elastic member 8 is arranged between the inner layer sheet 16 and the outer layer sheet 17.

[0033] In drawing 4, the absorptivity body 15 has the top sheet 13 of liquid permeability, the backseat 14 of liquid impermeability, the absorber 12 arranged among these, and the side flap 18 which extends outside from the edges on both sides of a backseat 14, the side flap 18 is turned up by the clinch line part 19 on the top sheet 13, and the 2nd flexible elastic member 20 is arranged at the clinch line part 19.

[0034] Moreover, in the fixed point 21, adhesion immobilization is carried out at the top sheet 13, and further, the turned-up side flap 18 is arranged at the side edge section 22 of the side flap 18 so that the 1st flexible elastic member 23 may be wrapped in by the side flap 18.

[0035] For this reason, the leakproof flap which uses the clinch line part of the side flap 18 as a tip edge at the trousers mold usage \*\*\*\* diaper 1 on the basis of the radial border 24 of the adhesion width of face H of the absorptivity body 15 and the sheathing member 7. The

leakproof flap which uses the side edge section 22 of the side flap 18 as a tip edge on the basis of the fixed point 21 of the side flap 18 is arranged at a duplex, and since the flexible elastic member is arranged in the state of expanding in each tip edge, the structure which a tip edge sticks to the skin is formed during wear.

[0036] It is the cross-sectional view showing the condition of having cut in the direction, and like what was shown by drawing 4, adhesion immobilization of the absorptivity body 15 is carried out at least by the part on the Z-Z' inner layer sheet 16 with drawing 5 perpendicular to the longitudinal direction of a diaper [ in / for the trousers mold usage \*\*\*\* diaper 1 of this invention / drawing 2 ] which constitutes the sheathing member 7, and the 4th flexible elastic member 9 is arranged between the inner layer sheet 16 and the outer layer sheet 17.

[0037] In drawing 5, the absorptivity body 15 like what was shown by drawing 4 The top sheet 13 of liquid permeability, The backseat 14 of liquid impermeability, and the absorber 12 arranged among these, It has the side flap 18 which extends outside from the edges on both sides of a backseat 14. The side flap 18 is turned up on the top sheet 13 by using the edges-on-both-sides section of an absorber 12 as a line part 19 by return, and adhesion immobilization of the turned-up side flap 18 is carried out at the top sheet 13.

[0038] Drawing 6 is the top view showing the condition of having arranged the flexible elastic member to the sheathing member 7 of the trousers mold usage \*\*\*\* diaper of this invention. It is what showed the example of arrangement of the 3rd flexible elastic member 8 in drawing 2, the 4th flexible elastic member 9, the circumference of the waist flexible elastic member 10, and the 5th flexible elastic member 11. Each elastic member consists of a flexible two or more yarn-like spring material, and has the work to which a wearer is made to stick an absorber continuously with such flexible elasticity.

[0039] Drawing 7 is the top view showing another example with drawing 6 showing the condition of having arranged the flexible elastic member to the sheathing member 7 of the trousers mold usage \*\*\*\* diaper of this invention. The 3rd flexible elastic member 8 and the 4th flexible elastic member 9 are cut in the center section in alignment with the longitudinal direction in the length-from-the-crotch-to-the-cuff section of the sheathing member 7. Each elastic member consists of a flexible two or more yarn-like spring material, and has the work to which a wearer is made to stick an absorber continuously with such flexible elasticity.

[0040] Moreover, in the trousers mold usage \*\*\*\* diaper of this invention, the 3rd flexible elastic member and/or the 4th flexible elastic member can constitute two or more using the flexible elastic member from which expanding stress differs, and it is possible to set it as required expanding stress in each part of the part of the circumference of the foot in the sheathing member 7 and the circumference flank of the waist.

[0041] As a top sheet of liquid permeability used for the trousers mold usage \*\*\*\* diaper of this invention, polyethylene, The liquid permeability nonwoven fabric which consists of polypropylene, polyester, and a synthetic fiber that used other thermoplastics as the raw material is used. The polyethylene sheet of liquid impermeability [ backseat / of liquid impermeability ], the polyethylene sheet which prepared the fine hole preferably, A liquid impermeable sheet with the moisture permeability which added and extended the filler to thermoplastics or the sheet of these liquid impermeability, and a nonwoven fabric may be stuck, a fear of being steamed if moisture permeability is given disappears, and it is more comfortable.

[0042] Moreover, the 1st flexible elastic member, the 2nd flexible elastic member, the 3rd flexible elastic member, The 4th flexible elastic member, the 5th flexible elastic member, and a circumference opening of the waist flexible elastic member Urethane yarn, The flexible elastic body used for the usual usage \*\*\*\* diapers, such as yarn rubber, can be used as it is. these flexible elastic members -- respectively -- an expanding condition -- the later self at the side flap, circumference opening of foot, circumference opening of the waist, and past time -- time -- the circumference center section of the waist -- arranging -- having -- hot melt adhesive -- predetermined -- adhesion immobilization is carried out to the field.

[0043] In fluff pulp, what used the superabsorbency polymer together to the principal member is desirable, in addition, as for an absorber, mixture and laminated material, such as absorbent-paper independence or heat welding fiber, are used. Moreover, although it may be desirable to consider as the laminated structure which wrapped the whole in tissue and a sandglass mold or a \*\* type is sufficient as the configuration of an absorber, fit nature with the better sandglass mold is obtained.

[0044] As for a side flap, an outer layer sheet, and a inner layer sheet, what can use the nonwoven fabric which consists of polyethylene, polypropylene, polyester, and a synthetic fiber that used other thermoplastics as the raw material, and has water repellence is more desirable.

[0045]

[Effect of the Invention] According to the trousers mold usage \*\*\*\* diaper of this invention, the side flap which extends outside from the longitudinal direction edges on both sides of an absorber and an absorber is prepared in an absorptivity body. A side flap is turned up on a top sheet and the 1st flexible elastic member is arranged in the state of expanding at the side edge section of the turned-up side flap.

Moreover, the 2nd flexible elastic member is arranged in the state of expanding at a clinch line part. Along with the longitudinal direction of an absorptivity body, adhesion immobilization of the side flap is carried out on a top sheet between a clinch line part and the side edge section. The side edge section has estranged above an absorptivity body on the basis of the point that it was fixed on the top sheet and adhesion immobilization of the longitudinal direction both ends of the side flap furthermore turned up was carried out between a line part and the side edge section by return at the top sheet. By the side edge section sticking inside a wearer's thigh, and the 1st pocket structure being formed in the both sides of the cross direction of an absorptivity body of a radix point and the side edge section, when it is made to wear as a trousers mold usage \*\*\*\* diaper made to unite with a sheathing member Even if it is the case where a lot of urine is excreted at once, the case where urine is excreted by side \*\*\*\*\*, and the case where a loose passage or watery stool is excreted, excrement is a leakage broth with the pile thing out of the diaper according to pocket structure.

[0046] Moreover, if the 1st pocket structure is formed with a side flap as mentioned above, using the thing of the configuration of a sandglass mold as an absorber, it will set in the center section which meets crosswise [ of an absorber ]. In order to consider as the form where an absorber is wrapped in in pocket structure rather than the breadth of an absorber by the direction of spacing during both the radix points of the side flap section becoming large, Even if it is in the condition to which urine was absorbed to some extent and the rate of absorption of an absorber fell when a lot of urine whose rate of absorption of an absorber is smaller than the rate of urination is excreted in the center section, i.e., the length-from-the-crotch-to-the-cuff section, which meets crosswise [ of an absorber ] Urine is temporarily confined into pocket structure and it becomes possible about urine leaking out of an absorptivity body to stop as much as possible.

[0047] Moreover, on the absorptivity body of the trousers mold usage \*\*\*\* diaper of this invention, the 2nd flexible elastic member is arranged in the state of expanding at the clinch line of a side flap. Since the sheathing member is pasted by the adhesion field established in width of face narrower than the breadth of an absorptivity body, When it is made to wear as a trousers mold usage \*\*\*\* diaper made to unite with a sheathing member, a clinch line Because estrange from a sheathing member to the upper part on the basis of both the radial



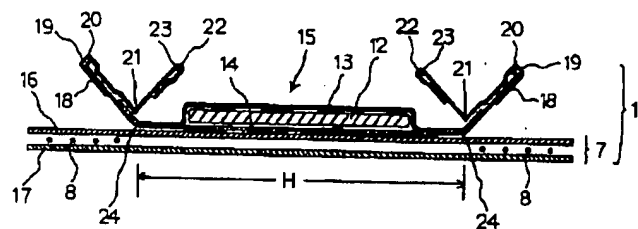
border of the adhesion field of an absorptivity body and a sheathing member and a clinch line sticks inside a wearer's thigh Since it can confine into the 2nd pocket even when it becomes possible to make the 2nd pocket structure form in the outside of the 1st pocket structure further and excrement overcomes the 1st pocket, It becomes possible about excrement leaking out of an absorptivity body to stop further. If the backseat of liquid impermeability which furthermore forms an absorptivity body is made equal to the breadth of the longitudinal direction both ends of an absorber and a side flap is made to form with the nonwoven fabric sheet which extends from the longitudinal direction edges on both sides of a backseat Since the field of the outside to the absorptivity body of the 2nd pocket has liquid impermeability, it becomes possible [ stopping further ] about excrement leaking out of an absorptivity body.

[0048] Moreover, the trousers mold usage \*\*\*\* diaper of this invention gives the function to hold the excrement for which a usage \*\*\*\* diaper is asked originally in the inside and outside of an absorber to an absorptivity body. Although the function to make an absorptivity body a sheathing member at the time of \*\*, and to stick an absorptivity body on a wearer's body, and to suppress a gap of an absorptivity body also to a motion of a wearer is given It has the feeling of wear which flexible elasticity is given at opening of the circumference of the foot of a pair, opening of the circumference of the waist, and the flank of the circumference of a bent back, and was excellent in the sheathing member. According to the operation which flexible elasticity is given to also in the antinode flank and/or the back of the circumference of the waist, and makes a wearer stick an absorptivity body Since it is hard to produce a clearance among wearers, urinary leakage serves as an absorptivity body with few things. The very good feeling of wear similar to the feeling which wore underwear is obtained without having good permeability and piling up inside a \*\*\*\* diaper using sweat during wear, since the outer layer sheet and inner layer sheet which furthermore form a sheathing member consist of a nonwoven fabric sheet.

[Translation done.]

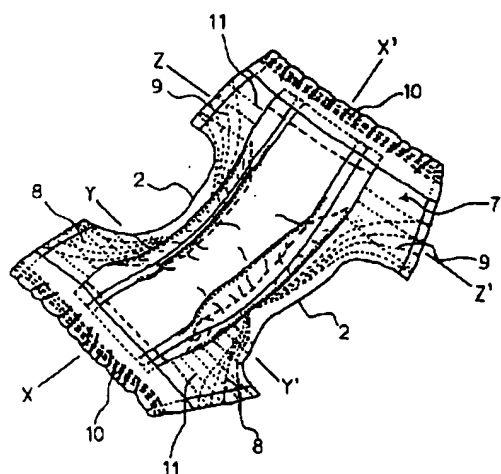


Drawing selection **Representative drawing**



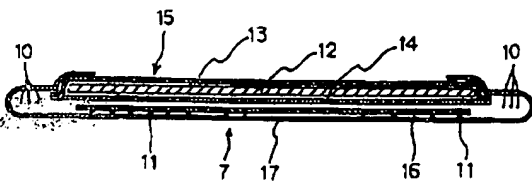
[Translation done.]

Drawing selection drawing 2



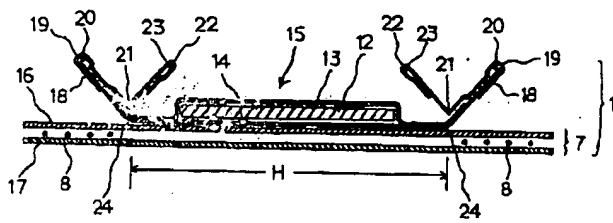
[Translation done.]

Drawing selection drawing 3



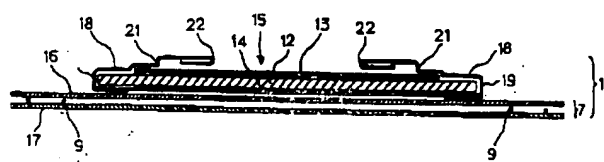
[Translation done.]

## Drawing selection drawing 4



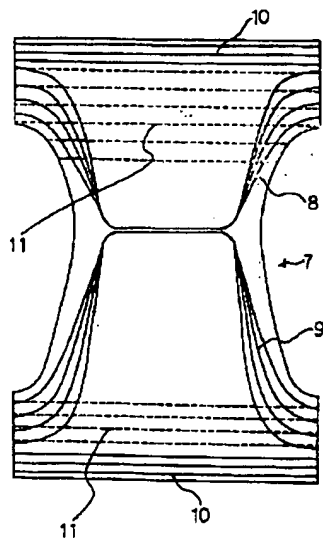
[Translation done.]

Drawing selection drawing 5



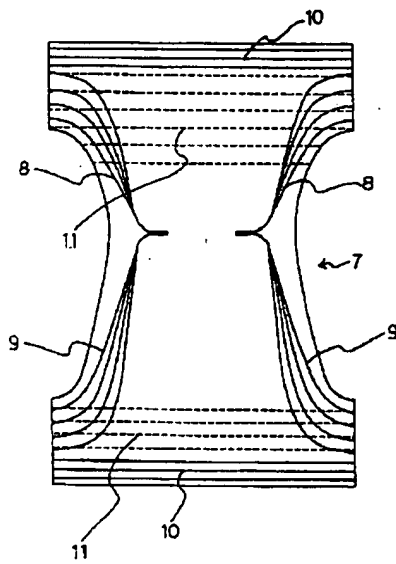
[Translation done.]

Drawing selection drawing 6



[Translation done.]

Drawing selection drawing 7



[Translation done.]



**This Page is Inserted by IFW Indexing and Scanning  
Operations and is not part of the Official Record**

**BEST AVAILABLE IMAGES**

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images include but are not limited to the items checked:

- ☐ BLACK BORDERS
- ☐ IMAGE CUT OFF AT TOP, BOTTOM OR SIDES
- ☐ FADED TEXT OR DRAWING
- ☐ BLURRED OR ILLEGIBLE TEXT OR DRAWING
- ☐ SKEWED/SLANTED IMAGES
- ☐ COLOR OR BLACK AND WHITE PHOTOGRAPHS
- ☒ GRAY SCALE DOCUMENTS
- ☒ LINES OR MARKS ON ORIGINAL DOCUMENT
- ☐ REFERENCE(S) OR EXHIBIT(S) SUBMITTED ARE POOR QUALITY
- ☐ OTHER: \_\_\_\_\_

**IMAGES ARE BEST AVAILABLE COPY.**

**As rescanning these documents will not correct the image problems checked, please do not report these problems to the IFW Image Problem Mailbox.**